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ABSTRACT

The independent contributions of action and violence in television programs to children's attention and social behavior were investigated. Pairs of preschool children were assigned to one of four television conditions (1) high action-high violence, (2) high action-low violence, (3) low action-low violence, or (4) no television. Action was defined as rapid movement by characters or objects; violence was physical aggression by characters. Visual attention was greater in high action than in low action programs; there were no differences in attention as a function of violence when action was controlled. Children were observed in free play sessions before and after viewing. Those who saw low action-low violence television or no television increased in imaginative, fantasy play; those who saw high action-high violence decreased in imaginative play; the high action-low violence group fell in between. There was some tendency for aggressive behavior to follow the opposite pattern--higher aggression following high action-high violence or high action-low violence than after low action-low violence or no television. There were no differences in activity level as a function of treatment. These results were interpreted as supporting arousal theory more strongly than observational learning theory.
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Abstract

The Effects of Action and Violence in Television Programs on the Social Behavior and Imaginative Play of Preschool Children

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The independent contributions of action and violence in television programs to children's attention and social behavior were investigated. Pairs of preschool children were assigned to one of four television conditions: 1) High action-high violence, 2) High action-low violence, 3) Low action-low violence, or 4) No TV. Action was defined as rapid movement by characters and objects; violence was physical aggression by characters. Visual attention was greater in high action than in low action programs; there were no differences in attention as a function of violence when action was controlled. Children were observed in free play sessions before and after viewing. Those who saw Low action-low violence TV or who saw No TV increased in imaginative , fantasy play; those who saw High action-high violence decreased in imaginative play; the High action-low violence group fell in between. There was some tendency for aggressive behavior to follow the opposite pattern -- higher aggression following High action-high violence or High action-low violence than after Low action-low violence or No TV. There were no differences in activity level as a function of treatment. The results were interpreted as supporting arousal theory more strongly than observational learning theory.

The Effects of Action and Violence in Television Programs on the Social Behavior and Imaginative Play of Preschool Children

Recent research on the effects of television on children has provided ample demonstration that violent program content often stimulates aggressive behavior. Despite the substantial evidence on the effects of television violence, there has been little change in television programming. One reason for industry resistance to change is the belief by many producers and network officials that violence is necessary to maintain children's interest in their programs. In their discussions, violence is frequently equated with "action." Action, however, is conceptually independent of violence and can be viewed as what John Wright and I are calling a formal feature of television programs; that is, a feature that can occur with many different types of content (Huston-Stein & Wright, 1977). If one could demonstrate that a high level of action without violence maintains children's interest, producers might be more amenable to changing program content.

A crucial question arising from this proposal, however, is whether action itself stimulates aggressive behavior or whether the aggression-instigating effects of current programming are due specifically to aggressive content. Two contrasting predictions can be made. Modeling theory leads to a prediction of specific effects; violence should lead to aggression and action should lead to increased activity. Two laboratory studies that included active, non-aggressive models as well as aggressive ones support this prediction (Bandura, Ross & Ross, 1963; Christy, Gelfand, & Hartmann, 1971).

General arousal theory, however, yields a prediction that action could be expected to produce arousal and, therefore, possible increases in aggression.

Support for an arousal interpretation of formal features similar to action comes primarily from studies of adolescents and adults (Krull & Watt, 1973; Watt & Krull, 1975). In these studies, the pace and variation in programs were analyzed and their effects were compared with the effects of violent content. Programs with high variation and pace were associated with increased physiological arousal (heart rate and blood pressure changes) and with aggressive behavior independent of the violent content of the program.

As the evidence for both predictions is scanty and only tangentially related to television effects on young children, one purpose of the present study was to test the independent effects of televised action and violence on the social behavior of young children.

A second limitation of previous studies of television violence has been the narrow range of behavioral outcomes examined. Most have focused solely on aggressive behavior. There are scattered findings suggesting that violence may affect other types of behavior such as tolerance for minor frustration (Friedrich & Stein, 1973), sharing (Hapkiewitz & Roden, 1971), and inattention to others' distress (Drabman & Thomas, 1974), but these must be viewed as tantalizing leads rather than solidly documented conclusions.

In the present study, activity level and aggression were central dependent variables because they were logically related to the TV variables being studied, but positive social behavior and imaginative play were also included. Psychologists' interest in imaginative play has recently been revived by conceptualizing it as a cognitive skill and as an important avenue for cognitive development (Singer, 1973). From this perspective, it can be argued that television of any kind may inhibit fantasy because it provides the child

with ready-made fantasy. A contrasting argument can also be made; television could stimulate imagination and fantasy by providing material for the child to use. If TV stimulated fantasy, one would expect the content of the TV programs to be reflected in the fantasy play. The design of the present study provides information concerning the effects of television vs. no television on imaginative play and the effects of television programs that differ in action and violence. Both aggression and non-aggressive fantasy were examined because one might expect aggressive fantasy to be especially susceptible to the influence of television violence.

In summary, the present study was an investigation of the effects of action and violence in television programs on the following areas of children's social behavior: aggression, activity level, imaginative fantasy (both aggressive and nonaggressive), and prosocial interaction. The inclusion of a group who watched no television permitted a subsidiary analysis of the effects of television per se on these areas of social behavior.

Method

Subjects.

Subjects were 66 preschool children enrolled in a university nursery school. Their ages ranged from 3 years 6 months to 5 years 8 months. Written permission for participation was obtained from all parents.

Television programs.

The television programs were selected from 22 Saturday morning children's programs that were videotaped and scored for formal features and violent content. Action was scored using a time sampling system. For every 15-second interval, the last 5 seconds were scored. The score for each in-

terval was the highest level of action exhibited by any character during that 5-second interval. The four levels that could be scored were: 1 = inactive stationary; 2 = active, but stationary (that is, moving arms, legs or body actively, but not moving through space); 3 = moving through space slowly, at the pace of a normal walk or less; 4 = moving through space rapidly, at the pace of a run or faster. Inanimate action could be scored simultaneously (e.g., rock slides, waterfalls).

Violence was also scored for each 15-second interval, but the entire interval was scored. Four categories were scored: 1) physical aggression (physical attacks or threats of physical harm), 2) verbal aggression (derogation, name calling, yelling angrily), 3) object aggression (attacks on objects), 4) threatening aggression (deliberate attempts to frighten or intimidate without physical threat). Each category could be scored no more than once per 15-second interval. Inter-judge agreement for all scoring categories was .80 or higher.

Three television programs 8-12 minutes in length were selected from the 22 scored programs to fit the following three cells of the design: 1) High action-high violence (an episode of "Speed Buggy"), 2) High action-low violence (a different episode of "Speed Buggy"), 3) Low action-low violence (an episode of "Oddball Couple"). The fourth logical cell, low action-high violence could not be filled because no children's programs contained this combination. The selected programs were edited slightly to eliminate any violence or high action that was inconsistent with their classification. 4) A no TV control group completed the design.

Procedure.

Children participated in two sessions in pairs that were all same sex

and were no more than six months different from one another in age. There were two 10-minute play sessions on different days. During a baseline session, children were allowed to play with a selection of toys while two adults videotaped them from the next room through one-way glass. Two cameras were used to record behavior on a split screen so that each child could be kept in view continuously.

After the baseline session, pairs of children were assigned to one of four treatments randomly with the restriction that the mean age in each condition had to be approximately equal. Assignments were made without knowledge of the baseline behavior.

The experimental session occurred one to five days after the baseline session. When the children entered the room, they were told that they would see a television program. They were seated across from one another at a small table so that each child's body was at a 90° angle to the television screen. Paper and crayons were on the table, but no other toys were available in the room. The children were told that they could color, watch TV, or talk. The adult would be in the next room and would return when the television program was over. When the adult left the room, the television program began. The children's visual attention to the program was videotaped. When the program ended, the experimenter returned to the room with the toys that had been used in the baseline play session and instructed the children that they could play again. Play behavior was observed and videotaped for ten minutes. Children in the No Television group were introduced immediately to the toys and allowed to play for ten minutes.

Results

Attention.

The first question to be examined is, did attention to the programs vary as a function of action or violence? Videotapes of the children watching the television programs were scored continuously by recording visual orientation to the screen on an event recorder. Rater reliabilities ranged from 92% to 96% agreement. Children were more attentive to the high action programs than to the low action program regardless of violence. They attended to the low action-low violence program 51% of the time, to high action-low violence 62%, high action-high violence 64%. A planned comparison of high versus low action was significant $F(1,18) = 4.01$, $p < .06$. Though the difference was large, the use of pairs of children reduced the degrees of freedom in the error term considerably. The comparison between high and low violence was not significant, $F(1,18) = 1.55$. Thus, differences in attention were accounted for by action, not by violence.

Social behavior.

The results for social behavior are more complicated. The videotapes of social behavior were scored by trained observers, blind to experimental treatment, for five categories of behavior.

Serious aggression was defined as physical or verbal attacks on the other child or attacks on objects. Hitting an inflated clown was included. Parenthetically, a recently published study (Johnston, DeLuca, Mortaugh, & Diener, 1977) provides some evidence for the validity of the much used and much maligned bo-bo doll. There were fairly high correlations between aggression to a bo-bo doll in the

laboratory and both peer and adult ratings of naturally occurring aggression.

Aggressive fantasy included any play involving pretend or imaginative elements that also had aggressive content. One frequent example was using the plastic jungle animals in aggressive attacks on other animals. Several children spontaneously made the gorilla into King Kong.

Imaginative play included all non-aggressive fantasy, pretend, or role playing.

Positive social interaction included all forms of friendly positive interchange.

All of these categories were counted as present or absent in each 15-second interval scored. The fifth category, activity level, was scored on a one to four scale in each interval where 1 = quiet and stationary and 4 = rapidly moving around the room. There were 20 scored intervals representing every other 15 seconds of the 10-minute play session.

Baseline data were lost for four pairs of children due to videotape failures. Each pair fell in a different cell, so their baselines were estimated on the basis of sample means for boys and girls separately. Experimental period scores were analyzed using analysis of covariance with baseline for each dependent variable as its covariate.

The means for all categories except positive social interaction appear in Table 1. There were no differences among treatments on positive

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Table 1 about here

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social interaction. Although treatment effects for serious aggression and for fantasy aggression did not reach acceptable levels of significance, (F (3,25) = 2.05; F (3,25) = 0.50 respectively), the patterns of means for the two variables were quite different. Serious aggression declined from the baseline to the experimental session in the No TV and low-action-low violence treatments, but remained at approximately the same level for children in both high action treatments. Fantasy aggression, by contrast, increased in the low action-low violence treatment and decreased in the high action-high violence treatment. The high action-low violence treatment remained stable.

Imaginative play did differ significantly as a function of treatment (F (3,25 = 3.32, $p < 05$). Children who saw the low action-low violence program increased most followed by those who saw no TV. Those in the high action-high violence condition decreased considerably. The high action-low violence treatment remained stable, hence it fell between the other two television treatments. Clearly, nonaggressive fantasy and aggressive fantasy followed a similar pattern, and that pattern was the reverse of the pattern for serious aggression.

The mean activity level scores appear in Table 1. The treatment effect was not significant, and the pattern is difficult to interpret. Separate analyses were performed on the frequencies of each of the four categories of activity ratings. There was a significant sex x treatment interaction (F (3,25) = $p < .05$) for category 2, "stationary, active" behavior. Boys in the high action-high violence treatment increased in this category, while boys in the other three treatments did not change. The meaning of

this finding is unclear.

Discussion

What can we conclude then about the independent effects of action and violence on 1) attention and 2) social behavior?

The first conclusion to be drawn is that action is more important in attracting and holding children's attention than violent content. The major difference in attention occurred between the high and low action programs. These findings could be partly due to the fact that both high action programs were from the same series, and the low action program was from a different series. There may be more similarity between the two high action programs in content or formal features not studied than either has to the low action program. At the same time, this similarity of the high action programs lends greater weight to the conclusion that violent content per se is not critical to attention. Two programs that were similar in most respects other than violent content led to similar levels of attention.

The social behavior data suggest, however, that action and violence each make additive contributions to the behavior patterns observed. The most clear-cut differences between conditions occurred for imaginative fantasy. Children who saw the low action-low violence program and those who saw No TV increased in imaginative play; those who saw high action-high violence decreased; the group who saw high action-low violence fell in between. Similar patterns occurred for aggressive fantasy. The means for serious aggression, though not significantly different, were in the opposite direction. Those who saw No TV or low action-low violence decreased in serious aggression; both high action programs were associated

with no change in aggression. High action-low violence was associated with some increase in activity level, but this cannot be considered a direct modeling effect because the children who saw high action-high violence declined some in activity. These patterns suggest that action and violence both contribute to the behavioral effects observed and that they may operate additively. Thus, these findings lend more support to general arousal theory than to modeling theory. It appears that action can have similar behavioral effects to violence. If violence and action are additive, then removal of one component might reduce some of the deleterious outcomes of television, but some of them would remain.

The effects of form and content on imaginative fantasy are particularly interesting because they have not been previously demonstrated. The present study provides information that is pertinent to the issue of whether television per se affects fantasy as well as information concerning the effects of different types of programs. These data suggest that it is the kind of television, not the presence or absence of television that is crucial to fantasy play. Television with low levels of action and violence, and which was relatively poor in attracting attention, led to increases in fantasy that were similar to those that occurred with no television. As the control group entered the play session directly from the classroom, the change cannot be attributed to boredom or deprivation of interesting stimuli. Instead, it appears that the "natural" course of play in this situation involved increasing use of fantasy and that the low action and violence program did little to disrupt this pattern.

A fuller understanding of the imaginative play results can be achieved

by examining the overall behavior patterns, especially the changes in serious aggression. The children in the low action-low violence TV condition and those who saw no TV declined in aggression from the baseline to the experimental session at the same time that they increased in imaginative play. Much of the decline occurred in object aggression, primarily hitting the inflated clown. Perhaps the inflated clown was a salient toy for most children when they entered the situation. Hitting it, however, is a repetitive, cognitively simple activity that may have satiated fairly quickly. Thus when the no TV control group and the low action-low violence TV group returned for a second session with the toys, they spent less time on hitting the bo-bo and proceeded to more complex and interesting imaginative play with the other toys available. Children who saw the high action programs, especially the one with violent content did not satiate on aggressive activity. They continued it at about the baseline rate. It looks as if the television form and content inspired a continued or renewed interest in the repetitive, aggressive activity and, as a result, they did not turn to other forms of play during the second session in the way that children did who were not exposed to action and violence.

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Table 1

Baseline and Experimental Scores on Social Behavior Measures for Children in Four Treatments

Behavior	Television Treatments							
	No TV		Low Action Low Violence		High Action Low Violence		High Action High Violence	
	Base	Exp.	Base	Exp.	Base	Exp.	Base	Exp.
Serious Aggression								
Mean	3.75	1.82	4.20	2.50	5.56	5.46	3.31	2.94
Difference	-1.93		-1.70		-.10		-.37	
Aggressive Fantasy								
Mean	1.07	1.25	0.33	2.50	1.07	1.00	3.25	0.69
Difference	+.18		+1.67		-.07		-2.56	
Imaginative Play (nonaggressive)								
Mean	4.58	5.58	5.72	7.67	5.27	5.25	5.94	2.56
Difference	+1.00		+1.95		-0.02		-3.38	
Frequency of Stationary, Active Behavior								
Boys								
Mean	2.50	2.25	3.20	3.00	3.63	3.00	2.25	6.88
Difference	-.25		-.20		-.63		+4.63	
Girls								
Mean	2.13	5.50	3.38	4.38	4.38	2.75	2.50	1.50
Difference	+3.37		+.50		-1.63		-1.00	

Footnote

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